COMMON DRAFTING COMMANDS AND SHORTCUTS

The following commands are located on the *View* panel on the *Home* ribbon

PAN

Icon: 
Command: PAN
Description: Moves the view
Procedure: Hold the left mouse button down in the drawing and drag to move the view. Hit *Enter* or *ESC* to exit.
Mouse Command: Hold down the center scroll wheel on the mouse and drag to move the view.

ZOOM EXTENTS

Icon: 
Command: ZOOM
Type *E* at the command line to select the *Extents* option
Description: Zooms the display to the drawing extents
Mouse Command: Double click on the center scroll wheel on the mouse
Hint: If you use this command and the drawing appears to be blank, even though you are sure there are objects in the drawing, you probably have objects located very far apart from each other. When this happens, you are zoomed out so far that the drawing objects are very small and can be hard to see.

ZOOM WINDOW

Icon: 
Command: ZOOM
Type *W* at the command line to select the *Window* option
Description: Zooms to an area defined by a rectangular window
Procedure: Click on two corners of a rectangle to define the view window.

ZOOM PREVIOUS

Icon: 
Command: ZOOM
Type *P* at the command line to select the *Previous* option
Description: Displays the previous zoom view

ZOOM REALTIME

Icon: 
Command: ZOOM
Hit *Enter* at the command line to select the default *real time* option
Description: Zooms in or out in real time
Procedure: Left click with the mouse and move the mouse to the left to zoom out or to the right to zoom in. Hit Enter or ESC to exit the command.
Mouse Command: Roll the center scroll wheel upward to zoom in or downward to zoom out. The display will zoom in or out around the point where the mouse pointer is pointing.

ZOOM OBJECT

Icon: 
Command: ZOOM
Type *O* at the command line to select the *Object* option
Description: Zooms to a display area based on the extents of an object
Procedure: Click on the object that you want to use to define the view extents

COMMON DRAFTING COMMANDS AND SHORTCUTS

ZOOM IN

Icon: 
Description: Zooms in to the center of the drawing

ZOOM OUT

Icon: 
Description: Zooms out about the center of the drawing

The following are commonly used AutoCAD drafting tools. The properties of these objects, including their elevation and beginning and ending coordinates, can be modified by selecting the objects and opening the *Properties* window. Open the *Properties* window by clicking on the  icon, which is located on the *Palettes* panel of the *Home* ribbon.

The properties of individual segments of objects which have individual vertices, such as polylines and rectangles, can be modified through the *Properties* window. Select the object, go to the *Properties* window and click on the *Vertex* cell. Arrows will appear next to the vertex number which you can use to scroll between individual vertices and modify their properties.

LINE

Icon: 
Command: LINE
Location: *Draw* panel on the *Home* ribbon
Draw toolbar
Description: The Line command creates a single straight line or a series of individual lines separated by vertices. Elevations can be assigned to the ends of the lines by changing the Start Z and End Z values in the *Properties* window.

ARC

Icon: 
Command: ARC
Location: *Draw* panel on the *Home* ribbon
Draw toolbar
Description: This command creates an arc based on three points which it will prompt you to specify. By default, you will be prompted to select the beginning point of the arc, the center, and the end point of the arc. In the arc pull-down tab, you also have the option to select the center firstfollowed by the starting and ending points of the arc, or to set the arc's endpoints based on arc length.

2D POLYLINE

Icon: 
Command: PLINE
Location: *Draw* panel on the *Home* ribbon
Draw toolbar
Description: The 2D Polyline command creates a two dimensional polyline object, with individual segments connected together to form a continuous object. If you assign an elevation to the 2D polyline it will apply to the entire object, so each individual segment will have the same elevation. If you wish to have varying elevations, see "3D Polyline" below.

COMMON DRAFTING COMMANDS AND SHORTCUTS

POLYLINE EDIT

Icon: 
Command: PEDIT
Location: *Modify* panel on the *Modify* ribbon (Click on the down arrow to expand the command listing)
Modify II toolbar
Description: This command is used to modify 2D polylines. Some of the modifications you can make to the polyline include close, join, edit vertex and reverse. Other modifications can be prompted in the command line. If you are going to join several polylines into a single object, be sure to specify that you are selecting multiple polylines (i.e. type 'm' at the command line) in the first step when you are asked to select the polyline(s).

CIRCLE

Icon: 
Command: CIRCLE
Location: *Draw* panel on the *Home* ribbon
Draw toolbar
Description: This command creates a circle, with various options for creating the object. By default, you will be prompted to select the center of the circle and then to enter the radius.

RECTANGLE

Icon: 
Command: RECTANG
Location: *Draw* panel on the *Home* ribbon
Draw toolbar
Description: This command is used to create a rectangle by specifying two corners of the object. The sites are aligned along the x and y directions of the drawing.

CURVES

Icon: 
Command: (various)
Location: *Draw* panel on the *Home* ribbon
Description: There are several commands available for creating curves, all of which can be found in the pull-down tab of the 'Curves' icon. Possible commands include:
Create Curves between Two Lines
Create Curves on Two Lines
Create Curve through Point
Create Multiple Curves
Create Curve from End of Object
Create Reverse or Compound Curve
Curve Calculator

ELLIPSE

Icon: 
Command: ELLIPSE
Location: *Draw* panel on the *Home* ribbon
Draw toolbar
Description: This command creates an ellipse, with various options for creating the object. By default you will be prompted to select the center of the ellipse and the endpoints on the x and y axes.

COMMON DRAFTING COMMANDS AND SHORTCUTS

POLYGON

Icon: 
Command: POLYGON
Location: *Draw* panel on the *Home* ribbon (Click on the down arrow to expand the command listing)
Draw toolbar
Description: This command creates an equilateral closed polygon. You will be prompted to enter the number of sides for the polygon object, to specify the center or edge of the polygon, whether it is inscribed (i) or circumscribed (c) about a circle, and for the radius of the circle.

3D POLYLINE

Icon: 
Command: 3DPOLY
Location: *Draw* panel on the *Home* ribbon (Click on the down arrow to expand the command listing)
Description: The 3D Polyline command creates a three dimensional polyline object, with individual segments connected together to form a continuous object. The 3D polyline differs from a 2D polyline in that each node can have a different elevation assigned to it.

This guide covers some of the most commonly using AutoCAD commands used to modify or manipulate objects in a drawing.

COPY

Icon: 
Command: COPY
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Copies a drawing object
Procedure:
1. Select the object(s) to copy and right click or hit enter. Continue to click on objects to add to the selection set. Hold the shift key and click an object to remove it from the selection set.
2. Click on a base point
3. Click on a second point to copy the object to. You can continue to copy the object by selecting points in the drawing until you hit the ESC key to exit the copy command.

MOVE

Icon: 
Command: MOVE
Location: *Modify* panel on the *Modify* ribbon (Pull down arrow on Modify panel to display additional command options)
Modify toolbar
Description: Moves a drawing object
Procedure:
1. Select the object(s) to move and right click or hit enter. Continue to click on objects to add to the selection set. Hold the shift key and click an object to remove it from the selection set.
2. Click on a base point
3. Click on a second point to which the object will be moved.

COMMON DRAFTING COMMANDS AND SHORTCUTS

ROTATE

Icon: 
Command: ROTATE
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Rotates a drawing object
Procedure:
1. Select the object(s) to rotate and right click or hit enter. Continue to click on objects to add to the selection set. Hold the shift key and click an object to remove it from the selection set.
2. Click on a base point that you want to rotate the object(s) around
3. Specify a rotation angle. You can either manually rotate the object by moving the mouse and clicking in the drawing area, you can type in a value for the rotation angle, or you can use the reference option by typing 'R' at the command line and hitting Enter. With the reference option, you can select two points on the object you are rotating and then a third point to which you want the object to rotate.

STRETCH

Icon: 
Command: STRETCH
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Stretches objects in the drawing. Objects such as circles, ellipses, and blocks, cannot be stretched.
Procedure:
1. Select the object(s) to stretch and right click or hit enter. Objects that are partially enclosed by a crossing window are stretched. Objects that are completely enclosed within the crossing window, or that are selected individually, are moved rather than stretched.
2. Click on a base point to represent the starting point of the stretch length.
3. Click on a second point to represent the ending point of the stretch length.

SCALE

Icon: 
Command: SCALE
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Expands or shrinks drawing objects
Procedure:
1. Select the object(s) to scale and right click or hit enter. Continue to click on objects to add to the selection set. Hold the shift key and click an object to remove it from the selection set.
2. Click on a base point to represent the point to scale objects from .
3. Specify a scale factor. You can either manually scale the object by moving the mouse and clicking in the drawing area, you can type in a value for the scale factor, or you can use the reference option by typing 'R' at the command line and hitting Enter. With the reference option, you can select two points on the object you are scaling and then a third point that represents the length that you want to have between the first two points you selected.

OFFSET

Icon: 
Command: OFFSET
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Offsets drawing objects a given distance or through a point.

This help sheet was obtained courtesy of the Minnesota NRCS Engineering Division and has been modified for use in Wisconsin.

COMMON DRAFTING COMMANDS AND SHORTCUTS

Procedure:
1. Specify the distance to offset the object.
2. Select the object to offset. Only one object can be offset at a time.
3. Select the side of the object where you want it to be offset to.

MIRROR

Icon: 
Command: MIRROR
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Mirrors objects about a base line
Procedure:
1. Select the object(s) to mirror and right click or hit enter.
2. Click on the first point of the mirror line.
3. Click on the second point of the mirror line.
4. Specify whether you want to erase the source object or not. If you answer no, a copy will be made that is a mirror image of the original object.

TRIM

Icon: 
Command: TRIM
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Trims object(s) using a cutting line defined by another drawing object.
Procedure:
1. Select the object that you want to use as a cutting line to trim the object you want to modify and right click or hit enter.
2. Select the object(s) that you want to trim. You can select objects individually or window to select multiple objects. When you use a window, all of the objects that the window overlaps will be trimmed.

NOTE: If the object that you want to trim does not intersect with your cutting line, type E and hit enter at the command line (for Edge) and then select the object(s) you want to trim. This will cause the object(s) to be trimmed at the point where it would intersect with the cutting line.

EXTEND

Icon: 
Command: EXTEND
Location: *Modify* panel on the *Modify* ribbon (pull down arrow next to *Trim* command)
Modify toolbar
Description: Extends object(s) using an extension line defined by another drawing object.
Procedure:
1. Select the object that you want to use as an extension line to extend the object you want to modify and right click or hit enter.
2. Select the object(s) that you want to extend. You can select objects individually or window to select multiple objects. When you use a window, all of the objects that the window overlaps will be trimmed.

NOTE: If the object that you want to extend does not intersect with your extension line, type E at the command line (for Edge) and then select the object(s) you want to extend. This will cause the object(s) to be extended to the point where it would intersect with the extension line.

COMMON DRAFTING COMMANDS AND SHORTCUTS

ERASE

Icon: 
Command: ERASE
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Erase objects
Procedure:
1. Select the objects(s) that you want to erase/delete. You can continue to click on objects to add them to the set of items to erase. If you want to remove an object from the set, hold down the shift key and select it again.

EXPLODE

Icon: 
Command: EXPLODE
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Explode continuous objects into individual components or segments
Procedure:
1. Select the objects(s) that you want to explode. You can continue to click on objects to add them to the set of items to explode. If you want to remove an object from the set, hold down the shift key and select it again.

BREAK

Icon: 
Command: BREAK
Location: *Modify* panel on the *Modify* ribbon (Pull down arrow on Modify panel to display additional command options)
Modify toolbar
Description: Breaks an object between two points
Procedure:
1. Select the first point where you want to break the object
2. Select the second point where you want to break the object

BREAK AT POINT

Icon: 
Command: N/A
Location: *Modify* panel on the *Modify* ribbon (Pull down arrow on Modify panel to display additional command options)
Modify toolbar
Description: Breaks an object at one point. Closed objects such as circles cannot be broken at a single point.
Procedure:
1. Select the object that you want to break
2. Select the point along the object where you want the object to be broken.

FILLET

Icon: 
Command: FILLET
Location: *Modify* panel on the *Modify* ribbon
Modify toolbar
Description: Places an arc fillet between two objects
Procedure:
1. When you start the command, you will be asked to select the first object. At this point, you will have the option to specify the radius of the arc that will be placed between the objects by typing R at the command line and then providing a value for the curve radius.
2. Select the second object.

COMMON DRAFTING COMMANDS AND SHORTCUTS

CHAMFER

Icon: 
Command: CHAMFER
Location: *Modify* panel on the *Modify* ribbon (pull down arrow next to Fillet command)
Modify toolbar
Description: Bevels the edge of objects a given distance along each edge from the corner.
Procedure:
1. When you start the command, you will be asked to select the first object. At this point, you will have the option to specify the distances that will be provided from the intersection point at the corner by typing D at the command line and then providing values for the chamfer length on each side.
2. Select the second object.